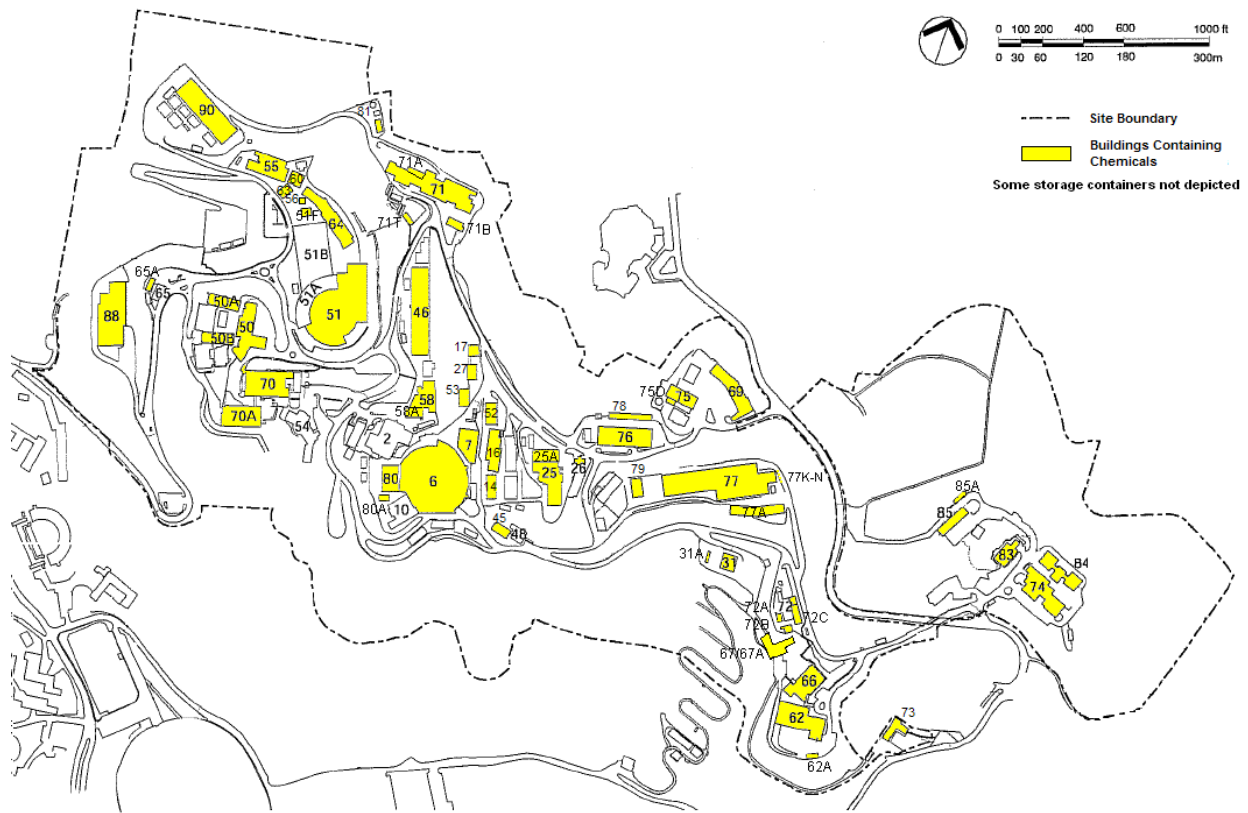


Lawrence Berkeley National Laboratory (LBNL) Emergency Management Annual Exercise After Action Report



Lawrence Berkeley National Laboratory

Title: “Operation Acid Test”

EXERCISE AFTER ACTION REPORT EMERGENCY MANAGEMENT EXERCISE

Operations Acid Test

Lawrence Berkeley National Laboratory conducted an exercise titled 'Operations Acid Test'. The exercise was conducted at Blackberry Gate, Building 77, and Building 48 on Wednesday, 9/2/2009. This was a Full-scale Exercise. The purpose of the exercise was to validate the effectiveness of the emergency response organization in accordance with the site's emergency plan and procedures and the DOE Order 151.1C.

There were fifteen participants in the team evaluating and coordinating the exercise. They were stationed at Blackberry Gate, B77 and/or B48 (the EOC).

Evaluators

Les Dutton, LBNL
Tuan Dang, Landmark Protection
Steve Luckett, DOE HQ
Mark Robinson, DOE Oak Ridge
Dale Daniel, EXCALIBUR Assoc.
Doug Wisman, Cal EMA
Pat Thomas, LBNL
Marissa Smithwick, LBNL
Jeff Troutman, LBNL
Roshan Shadlou, LBNL
Jeff Lind, Dep., Alameda County Sheriff's OHSES
Greg Morgado, Lt., Alameda County Sheriff's OHSES

Safety Officer

Amie Krigbaum, LBNL

Master Controller

Steve Joiner, Alpha TRAC

Assistant Exercise Director

Mike Raudenbush, Alpha TRAC

Exercise Director

Jan McClellan

Findings

There were no findings or corrective actions. There were thirteen recommendations for improvement.

Exercise Scenario

Thursday afternoon, September 2, 2009 at 1pm, an employee will call 911 to report a spill of 70% nitric acid in a 100 lb, 42Be container, on the east side of Building 77 (B77), between the building and the storage containers. There will be no personal injuries resulting from the spill. The doors into the building will be open, which will allow fumes to waft into the building. The building will be evacuated and Alameda County Fire Department will respond. The EOC will be activated due to the event.

Exercise Objectives

Alameda County Fire Department			
Alameda County Fire Department was assigned and evaluated against 6 Exercise Objectives. They met 6 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
IC.1	Given a 911 call or emergency alarm, safely respond to event scene in accordance with LBNL MEPP Dec. 2005.	Met	
IC.2	Upon arrival at the event scene, establish and maintain communications in accordance with LBNL MEPP Dec. 2005.	Met	
IC.3	Upon arrival at the event scene, assess the event situation in accordance with LBNL MEPP Dec. 2005.	Met	
FD.8	Given an incident, identify the IC, isolate the area, provide product identification and evaluate the need to request appropriate additional resources in accordance with the LBNL MEPP Dec. 2005, 5.2.2.	Met	
FD.9	Given an established incident command system, assess the response element capability and request assistance in accordance with the LBNL MEPP Dec. 2005, 5.2.2.	Met	
FD.10	Given an established incident, evaluate ability to effectively interface and communicate with LBNL management during significant emergency event by providing consequence assessment team with on-scene information needed to develop protective actions in accordance with LBNL MEPP Dec. 2005, 5.2.2.	Met	

Berkeley Site Office Duty Officer			
Berkeley Site Office Duty Officer was assigned and evaluated against 2 Exercise Objectives. They met 2 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
BSO DO.1	Given an operational emergency the BSO Duty Officer will ensure a communications link is established with	Met	I4:

	DOE HQ EOC, BSO and LBNL for the provision of briefings, status, reports and requests for information. DOE BSO Standard Operating Procedure (BSO-SOP-151.c).		
BSO DO.2	Given an operational emergency the BSO Duty Officer will coordinate the recall of additional BSO staffing during an emergency. DOE BSO Standard Operating Procedure (BSO-SOP-151.1c).	Met	

Berkeley Site Office Public Affairs Office			
Berkeley Site Office Public Affairs Office was assigned and evaluated against 2 Exercise Objectives. They met 2 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
BSO PAO.1	Given an operational emergency BSO PAO will coordinate and collaborate with LBNL PAO to develop and disseminate incident information LBNL MEPP Dec. 2005, 6.3.1.2.	Met	I3:
BSO PAO.2	Given an operational emergency, BSO PAO will brief the BSO Emergency Manager on communications issues and timely news release review and approval.	Met	

Building Emergency Team			
Building Emergency Team was assigned and evaluated against 8 Exercise Objectives. They met 8 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
BET.1	Given a building evacuation, staff shall evacuate building safely in accordance with LBNL MEPP Dec. 2005, Evacuation Guidelines.	Met	
BET.2	Given a building evacuation, staff shall exit to designated assembly areas in accordance with LBNL MEPP Dec. 2005, LBNL Evacuation Guidelines.	Met	I5, I6, I7, I8:
BET.3	Given a building evacuation, BET had their personal protective equipment (vests and hard hats) in accordance with LBNL MEPP Dec. 2005, BET Evacuation Duty Guidelines.	Met	
BET.4	Given a building evacuation, BET removed trauma kits from building in	Met	

	accordance with LBNL MEPP Dec. 2005, LBNL BET Evacuation Guidelines.		
BET.5	Given a building evacuation, BET removed radios from building in accordance with LBNL MEPP Dec. 2005, BET Evacuation Duty Guidelines.	Met	
BET.6	Given a building evacuation, BET conducted a sweep of the building in accordance with LBNL MEPP Dec. 2005, BET Evacuation Duty Guidelines.	Met	
BET.7	Given a building evacuation, BET conducted accountability and reported the results to the BET lead or incident commander in accordance with LBNL MEPP Dec. 2005, BET Evacuation Duty Guidelines.	Met	
BET.8	Given a building evacuation, BET shall make contact with the EOC in accordance with LBNL MEPP Dec. 2005, BET Evacuation Duty Guidelines.	Met	I1:

Emergency Contact Team			
Emergency Contact Team was assigned and evaluated against 4 Exercise Objectives. They met 4 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
ECT.1	Given an event, the ECT shall collect information to determine whether there is an Operational Emergency in accordance with LBNL MEPP Dec. 2005, 5.3.2.3.	Met	N1, I2: Event information was collected in a timely manner.
ECT.2	Given an event, the ECT shall categorize and classify the event in accordance with LBNL MEPP Dec. 2005, 5.3.2.3.	Met	Event was categorized within 13 minutes of discovery. Event was further classified within 3 minutes of categorization.
ECT.3	Given an operational emergency that has been categorized and classified, made regulatory notifications in accordance with LBNL MEPP Dec. 2005, 5.3.2.3.	Met	Event was reported to HQ WO within 2 minutes of classification.
ECT.4	Given an operational emergency, ECT shall activate the Emergency Response Organization in accordance with LBNL MEPP Dec. 2005, 5.3.2.3	Met	ERO was activated in a timely manner with appropriate level of staffing.

EOC			
EOC was assigned and evaluated against 5 Exercise Objectives. They met 5 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
EOC.1	Given an Operational Emergency, staff and activate the EOC in accordance with LBNL MEPP Dec. 2005, 5.3.2.	Met	
EOC.5	Given an Operational Emergency, maintain and process event information reflecting site conditions, personnel safety, hazard conditions, mitigation, significant events, action items, and other event information in accordance with LBNL MEPP Dec. 2005, 5.4.1.1.	Met	I9:
EOC.6	Given an operational EOC, provide event information to the JIC, State EOC, Tribal Government, and DOE-HQ OC in accordance with LBNL MEPP Dec. 2005, 5.3.2.3, 5.4.1.1, 6.2.	Met	
EOC.7	Given an operational EOC, develop plume model projections on hazardous releases in accordance with LBNL MEPP Dec. 2005, 5.4.1.1.	Met	I10, I12:
EOC.8	Given an operational EOC, process press releases in accordance with LBNL MEPP Dec. 2005, 6.3.	Met	I11:

Exercise Control and Evaluation			
Exercise Control and Evaluation was assigned and evaluated against 13 Exercise Objectives. They met 13 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
C/E.4	Given an emergency management/preparedness drill/exercise, the Controller and Evaluator Organization is adequately staffed to control and evaluate the drill/exercise in accordance with LBNL MEPP Dec. 2005, 8.2.	Met	
C/E.7	Given an emergency management/preparedness drill/exercise, the Controllers provide planned and/or earned information in accordance with the LBNL MEPP Dec. 2005, 8.2.	Met	
C/E.9	Given an emergency management/preparedness drill/exercise, the Controllers prohibit interference by	Met	

	nonparticipants, Evaluators, and Observers in accordance with LBNL MEPP Dec. 2005, 8.2.		
C/E.12	Given an emergency management/preparedness drill/exercise, the Controller and Evaluator Organization uses proper communications protocols in accordance with LBNL MEPP 2005, 8.2.	Met	I13:
C/E.13	Given an emergency management/preparedness drill/exercise, role players accurately depict the proper simulation(s) in accordance with LBNL MEPP Dec. 2005, 8.	Met	
C/E.14	Given the termination of the emergency management/preparedness drill/exercise, the lead controllers facilitate (when requested by the lead responder) the post-drill/exercise organizational critique/hotwash in accordance with LBNL MEPP Dec. 2005, 8.2.	Met	
C/E.18	Given completion of an emergency management/preparedness drill/exercise, the Evaluator and Controller Organization staff attends the post exercise evaluator and controller debrief in accordance with LBNL MEPP 2005	Met	
C/E.21	During the exercise did the controller organization ensure the safe and secure conduct of the participants' actions? LBNL MEPP 2005, 8.2	Met	
C/E.22	During the exercise, did the controller organization provide timely event information to participants?	Met	
C/E.24	During the exercise, did the control staff provide communications with the participants that were consistent with the needs presented by the scenario?	Met	
C/E.25	Did the controller organization conduct the exercise in accordance with the exercise package?	Met	
C/E.26	During the exercise, did the controller organization permit exercise participant free play?	Met	
C/E.27	Did the evaluator organization display	Met	

	an understanding of the boundaries associated with evaluating the exercise against the stated objectives?		
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Landmark Protection			
Landmark Protection was assigned and evaluated against 3 Exercise Objectives. They met 3 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
Landmark.1	Given a 911 call, emergency alarm, or security alarm, security assets will notify ECT and Landmark Security Manager in accordance with LBNL MEPP Dec. 2005, 5.2.2.	Met	
Landmark.2	Given a 911 call, emergency alarm, or security alarm, security assets will safely respond to event scene in accordance with LBNL MEPP Dec. 2005, 5.2.2.	Met	
Landmark.3	Given an event the Security Command Center will determine and implement access and egress control in accordance with LBNL MEPP Dec. 2005, 5.2.2.	Met	

LBNL Public Affairs Office			
LBNL Public Affairs Office was assigned and evaluated against 3 Exercise Objectives. They met 3 of the assigned objectives and failed to meet 0.			
Obj. Id.	Objective Statement	Results	Comments
LBNL PAO.1	Given an operational EOC, LBNL PAO will process press release(s): in accordance with the LBNL MEPP Dec. 2005, 5.4.1.1.	Met	I11:
LBNL PAO.2	Given an operational EOC, LBNL PAO will write & distribute press release(s), and coordinate with BSO's PAO in accordance with LBNL MEPP Dec. 2005, 5.4.1.1.	Met	I11:
LBNL PAO.3	Given an operational EOC LBNL PIO and BSO PIO collaborate on gathering information, developing a press release(s) and working out details of process in accordance with LBNL MEPP Dec. 2005, 5.4.1.1.	Met	I11: LBNL PIO and BSO PIO worked well together to develop and disseminate a press release.

Participant List and Levels of Participation

Participant	Level of Participation
EOC	Full
Public Affairs Officer	Full
Alameda County Fire Department	Full
National Atmospheric Release Advisory Capability	Full
Exercise Control and Evaluation	Full
LBNL Public Affairs Office	Full
Landmark Protection	Full
Berkeley Site Office Duty Officer	Full
Berkeley Site Office Public Affairs Office	Full
Building Emergency Team	Full
Building Manager	Full
Emergency Contact Team	Full
DOE Headquarters EOC	Limited: Notification Only
Berkeley Fire Department	Limited: Notification Only
Department of Energy	Limited: Notification Only
LBNL Executive	Limited: Notification Only
Alameda County Emergency Operations Center	Limited: Notification Only
Alameda County Regional Emergency Communications Center	Limited: Other

Participant Performance Summary

Organization	Number of Objectives	Met	Not Met	Findings	Improvement Items	Superior Performance	Noteworthy Practices	N/A	N/O
EOC	5	5	0	0	4	0	0	0	0
Alameda County Fire Department	6	6	0	0	0	0	0	0	0
National Atmospheric Release Advisory Capability	0	0	0	0	0	0	0	0	0
Exercise Control and Evaluation	13	13	0	0	1	0	0	0	0
DOE Watch Office	0	0	0	0	0	0	0	0	0
DOE Headquarters EOC	0	0	0	0	0	0	0	0	0
Berkeley Fire Department	0	0	0	0	0	0	0	0	0
Department of Energy	0	0	0	0	0	0	0	0	0
Landmark Protection	3	3	0	0	0	0	0	0	0
Alameda County Regional Emergency Communications Center	0	0	0	0	0	0	0	0	0
Berkeley Site Office Duty Officer	2	2	0	0	1	0	0	0	0
Berkeley Site Office Public Affairs Office	2	2	0	0	1	0	0	0	0
Building Emergency Team	8	8	0	0	5	0	0	0	0

Building Manager	0	0	0	0	0	0	0	0	0
Emergency Contact Team	4	4	0	0	1	0	1	0	0
LBNL Executive	0	0	0	0	0	0	0	0	0
LBNL Public Affairs Office	3	3	0	0	0	0	0	0	0
Alameda County Emergency Operations Center	0	0	0	0	0	0	0	0	0
Exercise Totals	46	46	0	0	13	0	1	0	0

N/A = not applicable

N/O = not observed

Performance Summary

The response was evaluated against 46 exercise objectives. 13 improvements were found (I1, I2, I3, I4, I5, I6, I7, I8, I9, I10, I11, I12, and I13). 1 noteworthy practice was found (N1).

Improvement Items

Berkeley Site Office Duty Officer	
Improvement Item	Recommended Action
(Objective: BSO DO.1) I4: BSO Duty Officer did not get Everbridge notification of EOC activation.	Update BSO Duty Officer contact information in Everbridge. Responsible Organizations: Emergency Services Program Completion Date: 9/17/2009

Berkeley Site Office Public Affairs Office	
Improvement Item	Recommended Action
(Objective: BSO PAO.1) I3: BSO PAO did not receive Everbridge notification of event.	Add BSO PAO contact information to Everbridge database. Responsible Organizations: Emergency Services Program Completion Date: 9/24/2009

Building Emergency Team	
Improvement Item	Recommended Action
(Objective: BET.8) I1: Notify the EOC with information.	Revise BET Evacuation Duty Guidelines to state contact with EOC to be made by BET. Responsible Organizations: Emergency Services Program

	Completion Date: 12/2/2009
(Objective: BET.2) I5: Designated assembly area was downwind of incident.	Review/revise BET Evacuation Duty Guidelines to include evaluation of safety of the designated assembly area. (i.e. Should area be relocated due to wind direction or some other type of issue?) Install wind socks, for identification of wind direction, on buildings with large quantity/bulk chemical storage. Responsible Organizations: BET, Emergency Services Program Completion Date: 03/02/10
(Objective: BET.2) I6: Stop traffic, both pedestrian and vehicular to incident area prior to first responders arriving on scene.	Review/revise BET Evacuation Duty Guidelines to include traffic control to incident. Responsible Organizations: BET, Emergency Services Program Completion Date: 03/02/10
(Objective: BET.2) I7: Improve demarcation/signage for designated assembly areas.	Install signage for designated assembly areas. Responsible Organizations: Emergency Services Program, Facilities Completion Date: 03/02/10
(Objective: BET.2) I8: Exits to building not monitored to prevent re-entry.	Review BET Evacuation Duty Guidelines. Responsible Organizations: BET Completion Date: 12/2/2009

Emergency Contact Team	
Improvement Item	Recommended Action
(Objective: ECT.1) I2: Improve communication between Incident Command and the Emergency Contact Team.	Develop communication protocol to ensure information flow between IC and ECT to include liaison to the ICP to relay information between ECT and IC. Responsible Organizations: Emergency Services Program Completion Date: 03/02/10

EOC	
Improvement Item	Recommended Action
(Objective: EOC.5) I9: Some participants had problems using Web EOC.	Provide Web EOC training on a quarterly basis. Responsible Organizations: Emergency Services Program Completion Date: Training to be offered periodically.
(Objective: EOC.7) I10: Discrepancy in plume modeling outcome.	Determine why there was a discrepancy between the EAL and NARAC ERPG levels. Ensure proper amounts were modeled. Responsible Organizations: Emergency Services Program Completion Date: 03/02/10

(Objective: EOC.8) I11: Development of press release was slow.	Develop a set of press release templates to be used for potential incidents. Responsible Organizations: LBNL PAO Completion Date: 12/2/2009
(Objective: EOC.7) I12: Plume model results not presented in terms needed to verify appropriate actions, categorization and classification.	Plume model print outs in ERPG-2 values. Aerial views of lab preloaded so plume model results can be displayed to scale on the aerial views. Responsible Organizations: Emergency Services Program Completion Date: 03/02/10

Exercise Control and Evaluation	
Improvement Item	Recommended Action
(Objective: C/E.12) I13: Proper communications protocols not used a couple of times.	Remind all participants in an exercise/drill that they must begin and end communications with "this is an exercise or drill". Responsible Organizations: Emergency Services Program Completion Date: Ongoing, must be part of all training for exercises and drills.

Noteworthy Practices

Participant: Emergency Contact Team

Objective: ECT.1

Noteworthy Practice: N1 Worse case scenario was used when exact information was not available. It was the right thing to do.

Lessons Learned

Prior to first responders arriving on scene there was no traffic control in place. BET members are often the first on scene, so the BET Evacuation Guidelines should be revised to add control for both pedestrian and vehicular traffic.

In a hazardous materials release a wind sock to determine wind flow is necessary for BET members to evacuate staff upwind of event.

There was confusion regarding the amount of chemical spilled and the container. The container could hold 100 lbs of the nitric acid, which would equal about 10 gallons spilled. Clearer direction regarding spill amounts and type, i.e. nitric acid versus nitric gas, must be included in scenario information. Having a liaison from the EOC at the ICP might have cleared up this discrepancy quickly.

Exiting B77 from the second floor, on the north side, there is nowhere to go after exiting the building.

Pictures from Operation Acid Test Exercise 09/02/09

B77 Hazardous material spill. Photos by R. Kaltschmidt



Controller and evaluators on scene prior to exercise start.



BET evacuating staff.

B77



ALCO FD/Hazmat and Landmark Security discussing situation.



ALCO FD sizing up incident.



Product identification.



Incident debriefing.

EOC Activation Photos by R. Saunders



EOC activated. Situational briefing in progress by ECT.



Finance Section setting up purchase tracking.



Plans Section developing situation report.



Operations Section collecting situational information from IC.



EOC Director discussing incident cost projections.